

We claim:

1. A conveyor for transporting material generally along a centerline, the conveyor comprising:

5 a rotatable drive wheel having a circumferential outer surface and a plurality of openings spaced circumferentially about the outer surface; and

a belt including an endless body disposed about the drive wheel outer surface and extending generally along the centerline, the body having a generally circumferential outer surface configured to transport material and a generally circumferential inner surface, and a
10 plurality of projections extending from and spaced circumferentially about the belt inner surface, each projection being separately disposable within each one of the wheel openings so that as the wheel rotates, at least one projection is disposed within one of the wheel openings such that the wheel drives the belt to circulate generally about the centerline to displace material disposed upon the belt outer surface generally along the centerline.

15 2. The conveyor as recited in claim 1 wherein:

the belt body has opposing side edges, each projection has an end spaced laterally inwardly from one of the two belt edges, and the belt inner surface has a substantially continuous circumferential surface section located generally between the projection ends and
20 the one belt edge; and

the conveyor assembly further comprises a support rail including an elongated body and a plurality of rollers rotatably connected with the rail body, at least a portion of the belt surface section being disposable upon the rollers such that the rail at least partially supports the belt as the belt circulates generally about the centerline.

3. The conveyor as recited in claim 2 wherein:

the continuous surface section is a first surface section and the rail is a first rail;

each projection has another, opposing end spaced inwardly from the other one of the two belt side edges and the belt inner surface has a second substantially continuous surface section, the second continuous surface section being located generally between the other ends of the projections and the other one of the belt side edges; and

the conveyor assembly further comprises a second support rail spaced generally horizontally from the first support rail, the second rail including an elongated body and a plurality of rollers rotatably connected with the second support rail elongated body, at least a portion of the second continuous section of the belt being disposable generally upon the rollers of the second support rail such that the second rail at least partially supports the belt as the belt circulates generally about the centerline.

4. The conveyor as recited in claim 3 further comprising a frame and wherein the centerline extends generally longitudinally through the frame, the drive wheel is rotatably mounted to the frame and the first and second support rails are connected with the frame so as to be generally disposed on opposing sides of the centerline.

5. The conveyor as recited in claim 2 further comprising another support rail spaced generally vertically from the support rail, the other support rail including an elongated body and a plurality of rollers rotatably connected with the other rail elongated body, at least a portion of the continuous section of the belt being disposable generally against the rollers of the other support rail such that the other rail guides the belt as the belt circulates generally about the centerline.

6. The conveyor as recited in claim 2 wherein the support rail includes an elongated channel member having opposing sidewalls, each roller being rotatably mounted between the sidewalls.

7. The conveyor as recited in claim 6 wherein the support rail further includes an elongated base member, the channel being removably mounted to the base member.

8. The conveyor as recited in claim 2 wherein when material is disposed upon the belt outer surface, each roller wheel supports a portion of the weight of the material.

9. The conveyor as recited in claim 1 wherein the belt body includes two opposing side edges and each projection extends generally laterally across the body inner surface between the two side edges.

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10. The conveyor as recited in claim 9 wherein each belt projection includes an elongated bar extending generally laterally across the body inner surface between the two side edges of the belt body.

10 11. The conveyor as recited in claim 10 wherein each projection is integrally connected with the belt body such that the bar or each projection is encased within material forming the belt body and remaining portions of the projection.

15 12. The conveyor as recited in claim 9 wherein each projection has two opposing ends, each projection end being spaced laterally inwardly from a separate, proximal one of the two body side edges, and the belt inner surface includes two substantially continuous surface sections, each continuous surface section being located generally between the plurality of the projections and a separate one of the side edges of the belt body.

20 13. The conveyor assembly as recited in claim 1 wherein the drive wheel includes:
a generally cylindrical body having a central longitudinal axis; and
a plurality of teeth extending radially outwardly from the body, the teeth being spaced apart circumferentially about the axis such that each wheel opening is provided by a separate one of a plurality of spaces, each space being defined between each pair of adjacent teeth.

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14. The conveyor as recited in claim 1 further comprising another rotatable wheel spaced from the drive wheel generally along the centerline, the belt body being disposed about both the drive wheel and the other wheel such that as the belt circulates about the centerline, two generally straight belt portions each extend generally between the drive wheel and the other wheel.

15. The conveyor as recited in claim 14 further comprising an elongated frame, the drive wheel and the other wheel each being rotatably mounted to the frame.

16. The conveyor as recited in claim 1 wherein the drive wheel has a central axis and the conveyor further comprises a drive unit operatively coupled with the drive wheel and configured to rotate the wheel about the central axis.

17. The conveyor as recited in claim 1 in combination with a construction vehicle.

18. A conveyor for transporting material, the conveyor comprising:
a drive wheel having a circumferential outer surface and a plurality of openings spaced circumferentially about the outer surface;
a belt including an endless body disposed about the drive wheel, the belt body having two opposing side edges, a generally circumferential outer surface configured to transport material, a generally circumferential inner surface enclosing an inner perimeter, and a plurality of projections extending from the belt inner surface, each projection being separately disposeable within each one of the wheel openings and having an end spaced laterally inwardly from one of the two belt edges such that the belt inner surface has a substantially continuous circumferential surface section located generally between the projection ends and the one belt edge; and
a support rail having a plurality of rollers, the rollers being contactable with the belt continuous surface section such that the rail at least partially supports the belt.

19. A belt for a material transporting conveyor, the conveyor including at least one drive wheel with an outer surface and a plurality of openings spaced about the outer surface, the conveyor belt comprising:

an endless body with a longitudinal centerline, two side edges disposed on opposite
5 sides of the centerline, a generally circumferential outer surface configured to transport material and a generally circumferential inner surface enclosing an inner perimeter; and

a plurality of projections extending generally from the belt inner surface, each projection being separately disposable within each one of the wheel openings so that as the wheel rotates, at least one projection is disposed within one of the wheel openings such that

10 the wheel drives the belt to circulate generally about the centerline to displace material disposed upon the belt outer surface generally along the centerline.